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Further Observations on Intraocular Acrylic Lenses in Cataract Surgery

It is now possible to offer more extensive and up-to-date information and statistics on intraocular acrylic lenses than it was when the author's initial reports were published, though inevitably, with so concise a subject, some ground will be covered which will be familiar to many who have read the earlier articles.

The disadvantages inherent in an aphakic eye corrected by an unsightly and heavy spectacle lens are well known. The image is unnaturally magnified by about one-third; the lens gives good acuity only through its optical center, oblique views cause distortion and apparent displacement of such objects as steps; the useful visual field is limited; and there is no accommodation. All of these disadvantages except the last, which is usually normally reduced in patients with cataract, are avoided by the use of an intraocular lens. Furthermore, if the other eye still retains useful sight binocular vision can be restored, the 2 eyes being partners again instead of rivals. All ophthalmologists have known patients with cataract who persist in using a cataractous eye, seeing only 6/24 (20/80) in preference to an aphakic eye correctable to 6/6 (20/20). Contact lenses are seldom really successful in aphakic patients, being difficult for a patient with cataract to insert and tolerate; moreover, even they magnify the retinal image by about one-sixth.

The problems to be solved were three: to select a transparent material that would be tolerated within the eye; to determine the size, shape, and refractive power of the artificial lens, and to devise a method of inserting it and retaining it in position.

The choice of material lay between glass and methacrylate, both of which are plentiful, consistent in composition, and easily and accurately worked. Both are well tolerated and set up negligible tissue reaction in the body. Even in the eye these substances cause no inflammation unless in contact with a sensitive and mobile portion such as the iris, and, indeed, there were many instances in which the presence of transparent foreign bodies had been overlooked by competent ophthalmic surgeons. The overwhelming advantage of methacrylate is its light weight—it weighs only about half as much as glass. The Imperial Chemical Industries were consulted with regard to suitable material and advised the use of their product Transpex I. This is a fully polymerized variety of polymethyl methacrylate in which there is no free monomer that might be gradually liberated and set up a tissue reaction. Impure forms of methacrylate, especially those which give off a faint odor, are dangerous, whereas the pure compound has never been known to cause irritation. The specific gravity of Transpex I is 1.19 and its refractive index 1.49. In passing it may be mentioned that human lens grafts were considered; they would not appear to be completely impracticable, though they have few if any advantages over synthetic compounds, which are not subject to degenerative changes.

The design of the artificial lenticulus was no simple problem. The natural lens is a complex structure, the composition of which varies as between capsules, cortex, and nucleus. Moreover, its dimensions are variable, especially when removed from the eye or when microscopic sections are made. Its refractive index is estimated at 1.42, but its total power has been variably estimated between plus 16.01 (Tscherning) and plus 19.11 (Gullstrand). It might be thought from these widely differing figures that considerable individual variation occurs, but the author's researches seem to indicate the opposite and that most human lenses are similar in power. The standard artificial substitute usually renders the refraction within about 2 diopters of that of the other eye, the disparity being insufficient to produce troublesome anisometropia. The diameter selected for the acrylic lens was 8.35 mm., about 1 mm. less than the natural, for ease of insertion and to avoid pressure on the ciliary body. Because the artificial lens might not lie in precisely the normal situation, no means could be devised for determining its curvatures except by trial on human beings. The first 2 patients, who fully understood the experimental nature of the operation proved that a lens could be inserted and tolerated, and the effect was good enough to allow computation of the overcorrection so that a satisfactory design was found for subsequent cases. The specification of the lenses used for all but the first patients is as follows:

Material	Transpex I
Diameter	8.35 mm.
Thickness	2.4 mm.
Anterior curve diameter	17.8 mm.
Posterior curve diameter	10.7 mm.
Refractive power in aqueous (refractive index 1.33),	24 diopters

A peripheral groove is cut in both surfaces before final polishing, to permit the lens to be grasped with forceps.

To retain the lens in position, consideration was given to the possibilities of sutures and similar devices, but it was hoped that the lens which is only about 15% heavier than the aqueous fluid it displaces, would be supported upright between the posterior lens capsule and vitreous body behind and the muscular iris with intact sphincter muscle in front. Fortunately this hope was justified; when a perfect extracapsular operation was performed no lens became dislocated. In fact, it is surprising, once the eye is soundly healed, how little the refraction changes. A slight movement of a powerful lens would be of great refractive moment.

A summary of the development of intraocular acrylic lenses and how various difficulties were overcome is given. Early and recent cases, numbering about 60 are reviewed, with an account of the results obtained. Observation extending for more than 2-1/2 years indicates that the lens is well tolerated and shows no evidence of late complications. The outlook is now more favorable than when the first publication appeared 1 year ago. (Internat. Col. Surgeons, Dec. 1952, H. Ridley) (See U.S. Navy Medical News Letter, Vol. 19, No. 4, p. 2)

Surgery of Ocular Trauma

In this antibiotic age the incidence of post-traumatic intraocular infection is expected to be almost nil. Unfortunately, too many traumatized eyes have been lost because of intraocular infection. It is disheartening to see secondary infection develop within 24 hours after an otherwise uneventful, rapid extraction of an intraocular foreign body. This has occurred in spite of prophylactic and postoperative administration of antibiotics.

Within the past 3 months 6 cases of intraocular infection associated with penetrating foreign bodies have been encountered. In all of them penicillin or penicillin and streptomycin were given systemically before operation. The dose varied from 300,000 to 600,000 units of penicillin, injected intramuscularly. Streptomycin was administered in a dose of 0.5 to 1 gm. daily. In spite of such therapy, infection developed in all cases. This means either that the organism responsible was not sensitive to penicillin or streptomycin or that these agents were not reaching the infection-susceptible agent in sufficient concentrations. The latter possibility cannot be stressed too strongly.

These 6 cases are illustrative of many important, and apparently overlooked, points. It is evident that although the foreign body was removed without any difficulty in a number of these cases, secondary infection developed within 24 hours in spite of continued systemic administration of penicillin and/or streptomycin. The amount of penicillin and/or streptomycin administered was inadequate. The dosage schedule employed, although satisfactory for infections elsewhere in the body, was not satisfactory for production of adequate intraocular levels of penicillin. The results also indicate that intraocular infections once established are difficult to control and that cultures of the intraocular fluids in these cases are usually sterile and are not helpful in detecting the cause of the infection or in selecting the antibiotic. It was evident from these cases that penicillin in the form previously administered will not prevent the development of postoperative intraocular infection. It was also apparent that once the infection has developed subconjunctival injections of penicillin in the order of 1,000,000 units, along with streptomycin, 50,000 units, will not control intraocular infection in all cases, nor will systemic or intravitreal administration of chloramphenicol or systemic, intravitreal, or subconjunctival administration of terramycin. One eye showed some temporary improvement after the intravitreal injection of penicillin and streptomycin, followed by subconjunctival injection of penicillin and streptomycin and systemic administration of massive doses of penicillin and streptomycin. The only successful case was one in which the eye responded to massive doses of sulfadiazine and penicillin administered systemically.

Treatment of intraocular infections following ocular trauma, i. e., penetrating wounds, penetrating foreign bodies, intraocular surgery, et cetera, can be divided into prophylactic therapy and therapy of existing infections.

In an effort to prevent the great visual loss caused by secondary infections following the extraction of foreign bodies, it is recommended that adequate dosage schedules with the chosen antibiotic be employed before as well as after operation. On the basis of intraocular-penetration studies, chloramphenicol would appear to be superior to the other antibiotics for systemic administration. Prophylactic failures in the past can be attributed to inadequate dosage, to the possibility of antibiotics being used which did not have a wide antibacterial spectrum, and possibly to the use of cortisone, which may have blocked the intraocular penetration of systemically administered antibiotics. Once secondary infection has developed after the extraction of a foreign body, vigorous therapy must be instituted, either by subconjunctival and systemic administration of massive doses of a combination of penicillin and streptomycin, or by systemic use of massive doses of chloramphenicol or direct intravitreal injection of the various antibiotics in tolerated doses. There is little time to be lost. If an antibiotic appears to be unsuccessful in controlling the infection after a 24-hour period, another antibiotic should be tried. In dealing with intraocular infections, culture studies cannot be used as a guide because of the time involved and because of the difficulty of obtaining positive cultures. (Arch. Ophth., Dec. 1952, I. H. Leopold)

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Use of 2-Ethylhexanol in Acute Pulmonary Edema

The patient with acute pulmonary edema presents a picture of impending disaster. An agent with an effective antifoaming action might prove a valuable adjunct to accepted therapeutic measures. Survival during the initial critical period would be enhanced by permitting a more effective oxygen exchange in the alveolar tissues because a large amount of fluid in the respiratory passages can be tolerated as long as no foam is formed.

Factors producing pulmonary edema include high blood pressure in capillaries of the pulmonary circulation, increased permeability of these vessels, decreased osmotic pressure, and neurogenic factors. Some drugs may be useful for one form of edema and may be contraindicated for another. For example, intravenous strophanthin may cause ectopic rhythms if given for this complication of coronary occlusion. Venesection, spinal anesthesia, mercurial diuretics, and possibly morphine may further reduce venous return and cardiac output during some shock states. Positive pressure oxygen is given during expiration and may be harmful in the presence of surgical shock or pulmonary emphysema. Morphine, barbiturates, and chloral are useful in cardiac patients but may exert a depressing action on the nerve centers when employed for edema owing to central nervous system injuries or inflammations. Hence, a therapeutic agent which could be employed in any case of acute pulmonary edema, regardless of the etiology, would be a useful

adjunct. Recent experimental and clinical studies by Luisada have demonstrated that certain volatile substances decrease the foaming. He has employed ethyl alcohol in his work which has been substantiated by other investigators.

An investigation of antifoaming agents employed in industry and in the laboratory suggested to one of the authors (N. E. R.) that 2-ethylhexanol had such possibilities for clinical use. This study is concerned with the application of this substance by inhalation for the reduction of foaming in acute pulmonary edema.

Any case of severe acute pulmonary edema, regardless of etiology, which came to the attention of the participating house staff at Kings County Hospital before other therapy was instituted was included in this study. There was a total of 14 unselected cases (13 males and 1 female). The majority were past 60 years of age. This was the initial attack in half the patients.

In vitro studies indicate that 2-ethylhexanol has antifoaming properties superior to either 95% or 50% ethyl alcohol. Fifty percent of 14 unselected patients suffering from severe acute pulmonary edema due to various causes showed a good response to the inhalation of 2-ethylhexanol before routine measures were instituted. In some cases relief was dramatic. There were no contraindications to its use and there were no toxic reactions. The substance is volatile, readily available, and easily applied. Further studies are in progress with 2-ethylhexanol in full concentration and with oxygen under intermittent positive pressure with most encouraging results thus far. (Dis. Chest, Jan. 1953, N. E. Reich, B. A. Rosenberg, and M Metz)

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Apresoline in the Treatment of Hypertension: A Two-Year Study

This report concerns the authors' experience during a 2-year period with 1-hydrazinophthalazine (Apresoline) and a low-salt diet in 40 patients. All have been on this program for at least 1 year. They have been grouped as to life expectancy, according to Smithwick's classification.

A comparison of survival rates after thoracolumbar sympathectomy, and after medical therapy in similar hypertensive patients, suggests that surgical treatment may improve the group life expectancy of patients with certain severe vascular complications (Smithwick group IV). Following sympathectomy, however, the number of patients who are dead 5 years after operation is high. The authors were particularly interested in those patients who might be expected to do poorly with sympathectomy. Could these be benefited by any one, or a combination, of the newer depressor drugs?

The depressor properties of Apresoline were discovered in the course of testing of antimalarial drugs. The reduction of both systolic and diastolic

pressure in animals, by an action largely central, without a sedative component, led to measurements of renal blood flow during the hypotension induced by parenteral doses of the drug in both normotensive and hypertensive patients. The increase in renal blood flow observed in hypertensive patients was followed by studies of the influence of this drug on vasoconstrictor reflexes in man. Apresoline appears to suppress the outflow of sympathetic vasopressor impulses.

The authors observed a reduction of blood pressure both supine and standing after intramuscular injection and an increased renal blood flow in an acute experiment in 1 patient with azotemia. A decreased cerebral vascular resistance was obtained in 7 patients with moderate hypertension. These acute experiments led to a prolonged study of the oral effectiveness of 1-hydrazinophthalazine in patients with essential hypertension.

Forty patients were evaluated in the fashion previously reported. All were placed on Apresoline plus a salt-restricted diet for at least 1 year. Sufficient observations and repetition of tests were made to permit grouping as to life expectancy according to the criteria of Smithwick.

There were 9 patients in group I, 17 in group II, 7 in group III, and 7 in group IV.

Side effects usually appeared just after the initiation of therapy and subsided within a week or two. Tachycardia was invariably produced. In some cases where headache was particularly bothersome, Pyribenzamine or Benadryl was prescribed with the Apresoline and afforded relief. The symptoms reported by the 40 patients were: headache, 15 cases; tachycardia and palpitation, 7 cases; nausea and vomiting, 5 cases; and urticaria, cutaneous flushing and lacrimation, 1 case each. Sixteen patients were unable to tolerate Apresoline for as long as 1 week. Severe headache and palpitation accompanying the tachycardia were the most frequent reasons for discontinuing its use. Recently less difficulty was encountered when a lower initial dosage of 12.5 mg. 4 times daily for the first 10 to 14 days was used.

Prolonged administration of Apresoline did not produce toxic reactions attributable to a cumulative effect. No attempt was made to determine any specific effect of the drug on blood cell morphology or liver function.

No progressive vascular damage was observed among the 33 patients in groups I, II, and III while on the program of oral Apresoline. Fifty-seven percent of the patients in these groups had a satisfactory reduction in blood pressure. In 5 of these patients there was improvement in the vascular complications noted before drug treatment was initiated. The fact that about 25% of all patients started on this drug remained on it for at least a year suggests that these patients were not seriously disturbed by the unpleasant aspects of this therapeutic program.

The present impression is that the patient with minimal evidence of progression in vascular complications may be given oral Apresoline and a low-salt intake so long as there is no evidence indicating further progression of damage. If clinical and laboratory data indicate increasing damage, and

particularly if renal function measurements suggest further deterioration, the authors believe that these signs warrant more drastic steps in treatment, with a trial of other potent experimental drugs. Surgical intervention is to be considered if these are likewise unsuccessful.

The knowledge most needed is: (a) Does Apresoline or any other depressor drug keep patients with mild hypertension from getting worse and thus obviate surgical intervention? (b) Does Apresoline prolong the lives of those with severe hypertension whose azotemia precludes operation? It is obvious that a longer period of observation in a larger series of patients is needed before these questions can be answered.

It is suggested that patients with severe essential hypertension, having good renal, cardiac, and retinal findings, are suitable candidates for a trial of oral Apresoline. This agent may be continued so long as there is no evidence of progression as determined by periodic re-evaluation. (Circulation, Jan. 1953, J. H. Hafkenschiel and M. A. Lindauer)

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The Coronary Problem

Coronary heart disease may result in a chronic progressive destruction of the myocardium with the impairment of cardiac efficiency or it may produce, with the occurrence of sudden episodic closure of a large vessel, a more acute destruction of the myocardium which has been termed acute myocardial infarction. This disease is assuming greater medical and social importance because of its increased frequency and the physical disability, or death, which often follow in its wake, and has created medicosociologic problems that remain for the most part unanswered. The present diagnostic armamentarium employed by the practicing clinician is inadequate to establish in all cases the existence of coronary artery pathologic changes which may ultimately serve as the site for one of the many pathogenetic changes that may lead to coronary obstruction with consequent myocardial pathologic changes.

Recent investigations by means of the ultracentrifuge have brought to light many facts that may prove of value in the diagnosis of atherosclerotic tendencies and early atherosclerosis of the coronary vessels. These facts have increased the hope that some therapy may be instituted to prevent the development of pathologic changes in the coronary vessels and other arteries.

A knowledge of the basic pathology underlying the changes occurring in the coronary circulation and the effect of these changes on the myocardium through the medium of the intercoronary anastomoses is essential for a complete understanding of the functional pathology associated with chronic coronary atherosclerosis.

Insufficiency of the coronary circulation is the basic factor underlying the symptoms accompanying acute and chronic coronary arterial disease. The effect on the myocardium and the ultimate clinical manifestations are

the result of the reduction of blood flow due to narrowing or acute occlusion of the coronary vessels and the compensatory development of larger than normal collateral channels.

Angina pectoris, "coronary failure," and acute myocardial infarction are the 3 clinical syndromes associated with acute and chronic manifestations of insufficiency of the coronary circulation.

Early diagnosis and adequate treatment in the first 2 may result in relative comfort to the patient and may perhaps prolong life by delaying the onset of the pathologic changes which ultimately result in the occlusive syndrome with acute myocardial infarction. The use of anticoagulants should be considered in recurrent "coronary failure." These drugs have been recommended also for use in the anginal syndrome.

Acute myocardial infarction must be diagnosed early if active, energetic therapy is to be instituted with the hope of a successful outcome. The establishing of the relative severity of the clinical condition will aid in outlining the therapy and especially in determining the validity of the indications for the administration of anticoagulant drugs. Measures to combat the complications occurring with acute myocardial infarction should be instituted early and carried out vigorously.

The solution of the coronary problem rests in the ultimate discovery of diagnostic procedures that will determine with certainty the individual who presents a predisposition to coronary artery disease or who may present the earliest signs of atherosclerotic changes. The institution of preventive or corrective therapy may follow upon this information. The diagnosis of the disease made possible by the occurrence of the coronary accident offers little hope for the correction of the basic abnormality. (West Virginia M. J., Jan. 1953, A. McMahon)

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Amyotrophic Lateral Sclerosis on Guam

This article reports the unusual occurrence of an uncommon syndrome in the native population of Guam. The American literature of the past 20 years was reviewed to determine whether any notable differences could be demonstrated between the condition as found on Guam and as described in the literature.

Guam is an island of the Micronesian group, peopled by Chamorros whose original ancestry is reputed to be either Malayan or Polynesian. However, the people today are mainly intermixtures with Spanish and Filipino blood, and a few are of Chinese and Japanese ancestry. On the whole they work as farmers or laborers, and their diet consists largely of rice, tropical fruit, native vegetables, fish, and recently, imported canned goods.

The opportunity to study this group occurred during the author's assignment to the Guam Memorial Hospital as a naval medical officer. The patient

population consisted chiefly of Guamanian natives, with a few natives from other island groups and a few other nationals who made their homes on the island or were there in a transient status. Nevertheless, the condition was found only in the Guamanian patients. The unusual frequency of this disease was suggested by the admission of 3 cases within 1 month. Interest was further aroused by discussion of the condition with hospital personnel and by review of the hospital records.

The first step was to review 15,873 admissions to Guam Memorial Hospital since 1945, selecting all the cases suggesting anything involving the motor system. All the available charts of these cases were then reviewed, and 46 cases were obtained which appeared to be possible cases of amyotrophic lateral sclerosis. In like manner 13,419 admissions to the adjacent U. S. Naval Hospital from 1 July 1947 to 9 March 1950 were also reviewed, the hospital population there was comprised mainly of American military personnel and their dependents, civil service employees, many Filipino contract laborers, and occasional other nationalities. It was of interest to find that over this period the diagnosis of amyotrophic lateral sclerosis was made in only 2 cases, and both of these were Guamanians in the naval service.

Thereupon, with a list of prospective cases, the author went throughout the island, village by village, consulting in each place both the village commissioner and the native nurse in the local dispensary, asking, first, directions to the homes of patients on the list who were still living, and the dates of death of those who had died. At the same time the names of anyone else in the village who was known to have similar symptoms or was paralyzed was asked.

The patients visited lived in 15 villages scattered throughout the island. It was noted that two-thirds of the patients gave a common birthplace, the capital, which seemed of some epidemiologic interest. However, it was found on checking that the majority of the people had concentrated in the capital before the war, but when the city was leveled the inhabitants were forced to scatter to adjacent villages. In contrast to this group, the remaining third had been born and had remained in more remote villages which had been less disturbed by the war.

Thirty-five cases, or 13 per 10,000 inhabitants, were seen. An unusually high number of cases (40%) gave a history of similar disease in other members of the family. As many as 5 members in 1 generation were afflicted. No common etiologic factor could be demonstrated. The duration of the disease was similar to that reported elsewhere.

Amyotrophic lateral sclerosis is a syndrome presenting signs and symptoms pointing to concomitant involvement of the new and old motor nervous systems. It is described as a clinical entity in the neurologic textbooks, but most of the authors state that progressive spinal muscular atrophy, lateral sclerosis, and progressive bulbar palsy may represent variants or anatomic localizations of the same process.

The clinical picture differed but little from that described classically. Some of the more unusual findings were: (a) Spasm or rigidity occurred in seemingly more cases than had been previously described. Next to hyperreflexia it was the most common sign of upper motor neurone involvement. (b) Clonus, absent superficial reflexes, and Babinski's signs were next in order of frequency as indications of pyramidal tract disease. (c) Signs of pseudobulbar palsy, as evidenced by hyperactive jaw reflexes and the sucking reflex, were found in an extremely large number (80%) of cases. (d) The spinal accessory nerve was involved in 40%, a figure considerably higher than is generally found in the literature.

Although all races appear susceptible, this seems to be the largest series of cases reported in people of Oriental origin. (Ann. Int. Med., Dec. 1952, D. R. Koerner)

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Studies on the Pressure of Closed Burn Dressings

This study is primarily concerned with the nature and role of the pressure developed in closed burn dressings of various types. In addition to experimental pressure studies, 60 patients variously treated in the Hospital for Sick Children, Toronto, have been followed clinically. Further observations have also been made in regard to comparing the effects of vaseline gauze and aluminum foil as surface applications.

Various methods of "pressure-dressing" the burns were studied. The routine "pressure occlusive" dressing consisted of either aluminum foil or of vaseline gauze directly applied to the burned area. This local application was then overlaid with fluffed gauze followed by a layer of pads. Pressure was obtained from layers of bias-cut flannel applied under tension over the local dressing. In addition, methods of supplementing the pressure features of this "pressure occlusive" dressing by the use of inflated bladders within the dressing have been studied.

Both the routine pressure-occlusive and the bladder-supplemented pressure dressings were encased in light plaster to provide a rigid outer covering against the pressure developed within the dressing. In a few of the cases that were treated with aluminum foil, loosely crumpled aluminum wool (shredded from foil) replaced the fluffed gauze. One two-thousandth inch thick aluminum foil, cut into 6-inch squares, was applied directly to the wound surface in the burns treated with this material as the local dressing.

It was the authors' previous clinical impression and repeated in this series, that a loose bulky dressing applied with no tension whatever, resulted in a burn surface that was moist, macerated, and covered with a grayish exudate at the end of 10 days. The dressings were likewise moist, foul, and contained large amounts of water-soluble exudate. This condition was largely controlled by applying the original dressing snugly with the bias

flannel under tension as in the routine pressure-occlusive dressing. The present studies indicate that no further improvement beyond this can be brought about by the continuous application of the original pressure over a 10-day period. Thus, the application of a pressure-occlusive dressing, applying pressure by means of bias-cut flannel with tension graded by the bandage being pulled snugly once only for each full turn of the flannel, is a simple and satisfactory dressing from this standpoint. This method of applying pressure results initially in pressures of around 20-40 mm. of Hg varying, of course, with the operator.

Substituting more elastic bandages for the bias-cut flannel resulted in a better maintenance of the pressure, particularly with rubber-containing bandage. However, in view of the authors' findings when the pressure was deliberately maintained over a period of time by means of inflated bladders, no clinical advantage might be expected to accrue from the use of these more expensive materials.

Too few cases were studied with aluminum mesh to warrant analysis. It was thought, however, that this gave the driest dressings. The aluminum mesh used was sufficiently coarse to produce superficial trauma if it came in contact with skin. No scars resulted, and the mesh did not seem to be uncomfortable. The aluminum foil dressing, however, was cleaner and less foul and contained less exudate.

What is of some interest from this work is the finding that with the routine pressure-occlusive dressing as described by Allen and Koch and widely used at the present time as the treatment of choice in closed dressing of burns, pressures of only about 10 cm. of water are maintained against the burn surface after the first 24 hours. This initial period of high pressure is similar in duration to that studied experimentally in goats by Cameron, Allen, Coles, and Rutland where close-fitting plaster bandaging and bias bandages were shown to reduce effectively plasma loss and local edema if applied without delay following the burn. This initial period covers that over which surgical shock associated with blood volume change is most apt to occur in the burned patient.

From the present finding it is probably well to keep in mind that with pressure-occlusive dressings, however, a pressure support greater than about 10 cm. of water cannot be relied upon after the first day. It further becomes apparent that beyond this period, the argument for the closed dressing versus the open method loses much of its value insofar as pressure factors are concerned. The pressure of the pressure-occlusive dressing has probably fulfilled its role by the end of the second day. From then on it may be regarded simply as a closed dressing of possibly questionable design. The multiple layers almost certainly serve to increase the temperature and moistness of the burn surface during this period, which may be disadvantageous. The authors are presently studying the implication of these findings clinically on selected cases, by removing the occlusive pressure bandaging after the third day. In this way, it is hoped to check any value of the

occlusive feature and the pressure feature of only a few mm. Hg from the second day on following the burn, as obtained with the routine pressure-occlusive dressing. (Plast. & Reconstruct. Surg., Dec. 1952, P. O. Crasweller, A. W. Farmer, W. R. Franks, and C. R. McComb)

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Epilepsy Following Craniocerebral Injury

The incidence of epilepsy 3 years after penetrating head injuries among 286 healthy young adults was found to be 41.6%. Eighty-three percent of patients continued to have seizures 3 years after injury. These data are in accord with the prevailing view that the most likely time for seizures to develop is within the first 2 years after original injury; nevertheless, 18 additional patients had onset of seizures during the third year, raising the total incidence to 41.6%.

If the reports of other investigators are reviewed critically, it is apparent that those who have carefully considered the problems of accurate diagnosis of epilepsy, accurate localization of the wound, necessity for exclusion of "early epilepsy," and, in particular, establishment of the fact of damage to brain substance are in agreement that the ultimate incidence, regardless of site, exceeds 40%. Rawling and Steinthal and Nagel found the general incidence to exceed 30%. There are a multitude of reasons for the difference in incidence as determined by different authors. The inclusion of "early epilepsy" is likely to raise the figure artificially, as in the inclusion as epilepsy of such debatable symptoms as paroxysmal unilateral headache, slight vertigo, abdominal pain, clonus associated with spastic hemiplegia, or vague scotomas. These and other poorly defined phenomena have been excluded in this study. On the other hand, some epileptic phenomena may be entirely overlooked by the patient and become evident only on direct questioning. One such patient, a left-handed person with a gunshot wound in the right occipital region, experienced paroxysmal left homonymous hemianopsia, followed by paroxysmal aphasia and a right-sided Jacksonian sensory "march." The figure is likely to be artificially low if the patients are not personally known to the investigator, if any nonpenetrating injuries are included, if true minor seizures in the visual or tactile spheres are ignored, if the questionnaire method is used without careful construction in conjunction with a cumulative recording system to permit cross-checking of result, if too large a series of patients are examined, and if the incidence is calculated without accurate firsthand knowledge of the original number of penetrating head injuries from which a known number of epileptics is derived.

The author found no evidence of hereditary predisposition as judged by a high relative incidence of epileptic relatives among the affected patients, and in this he is in agreement with Quadfasel and Walker. Alström, in a careful study of 897 proband families, found that the average over-all inci-

dence of epilepsy (mixed causes) among close relatives was 1.5%, and that it did not significantly exceed that of the general population. Thus, even for epilepsy of undesignated cause the data derived from relatives failed to support a genetic hypothesis for the group as a whole.

Evidence from other sources confirms the remarkable degree of lability to epilepsy of the average person. Thus, epilepsy occurs in 87.5% of persons with globular parasagittal meningiomas of the central third of the falx and in virtually all persons with cerebral cystocercosis. These data suggest that "predisposition," termed hereditary, does not play a significant role in symptomatic epilepsy.

The interval between the injury and the first recognized seizure may be as long as 2 decades; hence the ultimate incidence is not yet at a maximum for the group. Meyer described 33 cases of gunshot wounds of the head in which seizures developed only after 8 or more years had intervened. (Arch. Neurol. and Psychiat., Dec. 1952, C. W. Watson)

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Surgical Aspects of Blastomycosis

This report reviews current trends in the therapy, particularly surgical, of blastomycosis and presents a series of cases in which the disease was treated surgically.

Blastomycosis is a chronic inflammatory disease caused by a yeastlike fungus, Blastomyces dermatitidis. It may affect all organs, particularly the skin and lungs. One report on the incidence of the disease in various locations (in a series of 25 autopsies) is summarized. The route of infection is through the respiratory tract or, rarely, by trauma through the skin. The cutaneous lesion is an indolent papulopustular encrusted patch, enlarging at its periphery. Visceral lesions are either of the chronic granulomatous type or of a more acute exudative, often suppurative, nature. B. dermatitidis, with its granular cytoplasm and doubly refractive rim, can usually be found in exudates or biopsy specimens from involved organs. In one series of cases the disease was 29 times as common in men as in women.

Blastomycosis has been treated by high doses of iodides, up to 25 gm. per day, in conjunction with copper sulfate (locally and systemically), arsenicals, antibiotics, and x-ray. Desensitization with vaccine before iodide and x-ray therapy has been recommended by several observers. A recent report on the use of stilbamidine has also appeared.

Other observers have reported on the role of surgery in the therapeutic program of blastomycosis. Skin lesions may be treated by excision, curettage, or electrosurgical destruction in far-advanced cases. Incision and drainage, curettement, and amputation are of value in localized skeletal involvement. A case of posterior mediastinal and spinal canal granuloma was treated by partial excision and x-radiation, and apparently cured,

according to Craig and associates. Gaspar noted a case of granulomatous brain involvement, unsuccessfully treated by surgical excision. Cases of laryngeal, prostatic, and uterine blastomycosis, the latter being successfully treated by surgical excision and well after 15 years, are discussed by a number of observers.

Dr. J. M. Stevenson (Cincinnati) employs a technique of excision and grafting which he used in Cases 1, 3, 4, and 9, and which he will report in detail in a future publication. The essential points of the procedure are: (a) thoroughly cleansing the skin around the lesion but no preparation of the lesion itself, (b) marking the planned line of incision with methylene blue, (c) suturing several thicknesses of sterile dry gauze over the lesion, the sutures passing through only uninvolved skin around the lesion and only through the dermis and epidermis, (d) excising the lesion, taking care not to cut any of the sutures and to dissect deep to the inflamed tissue without breaking into it, and (e) placing a split or full-thickness graft on the area in the usual manner. Such precautions will prevent contamination of the surrounding skin or the fresh surgical wound by secretions from the involved area.

Surgical removal of peripheral blastomycotic lesions is indicated on the basis of the following:

A. If single or isolated peripheral lesions exist, their removal might result in cure, dependent on the arrest of the primary pulmonary lesion.

B. Active peripheral lesions, though secondary, may themselves act as foci for further dissemination.

C. Blastomycotic skin lesions may cause severe disfigurement.

D. Ulcerating skin lesions may be dangerous epidemiologically.

In blastomycotic urinary obstruction the surgeon may be instrumental in making the diagnosis as well as relieving the symptoms.

Of all methods of treatment in localized blastomycosis, surgery is of most practical value. (Surgery, Jan. 1953, J. R. Levitas and G. L. Baum)

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Early Diagnosis and Treatment of Carcinoma of the Cervix

For sometime the medical profession has sought to educate the layman into a "cancer-conscious" state of mind. It has utilized every potential medium at hand to publicize its theory that much of the responsibility for cancer detection rests with the individual patient. It has ardently campaigned over the radio, in the newspapers, and in current periodicals, stressing the need of personal vigilance; prescribing frequent check-ups, bemoaning procrastination, and emphasizing the danger of lumps and lesions. Relentlessly and with unmitigated realism it has warned the public to be on the watch for "signs and symptoms."

It appears that in its exuberance to educate the public, the medical profession has overlooked the all-important time element in regard to cancer of the cervix, and the fact that these so-called lumps and lesions are lethal manifestations. When "signs and symptoms" of cancer of the cervix come to the attention of the patient, it is often too late.

On this basis, it is the author's sincere belief that every female patient over 20 years of age who enters a doctor's office for any reason whatsoever should be examined for cancer of the cervix. If this were done, early detection of carcinoma would no longer be a rarity; the development of many cancers would be retarded in their incipiency.

It has been the author's experience that the female patient is most receptive to the suggestion of a Papanicolaou or vaginal smear as a precautionary measure. This should be followed by a cervical biopsy or curettage if there is any basis whatsoever for suspicion. The cervix is an organ that can be easily palpated; its very accessibility should encourage prophylaxis. It is no secret that cervicitis, acute or chronic, is a fertile field for the development of cancer. Early detection is possible only if routine use is made of the microscope and the laboratory. With cancer of the cervix the time element is paramount, and the chances for complete cure depend upon early diagnosis.

A review of 3,000 vaginal smears reveals that frequently a perfectly normal-appearing cervix, when a biopsy is performed, shows a clear-cut microscopic picture of malignant disease. Observation of the cervix may reveal a small leukoplakic spot or a small polyp at the external os, deceptively simulating a benign growth. The os is a particularly vulnerable spot for the origin of cancer. Occasionally, carcinomas grow into the glandular lumens of the bartholin cysts and may appear as small, very hard areas covered with perfectly normal-appearing epithelium. These areas should be probed. If they are degenerative, they will break through and divulge an undermining carcinomatous growth.

Any cervix that shows resistance to healing or presents a questionable atypical epithelial picture merits repeated microscopic tests. In just such an instance the author obtained 5 specimens for biopsy at monthly period from 1 patient. All 5 defied diagnosis. With the sixth, the presence of malignant change was established. Apprehension and perseverance in this case were justified, because granulation appeared at the vaginal cervical junction and, in spite of douching, showed not the slightest inclination to heal.

Tissue removed for biopsy should be of generous proportions to facilitate laboratory procedure. It is the author's opinion that the best specimens are obtained by "coning" the cervix with the radio knife, because the complete cervical canal at the external os can then be neatly removed and several blocks made for microscopic examination. The technic should be carefully developed so that charring and polarization are reduced to a minimum. The pathologist is definitely handicapped by any extensive coagulation of the epithelium of the specimen.

If it is determined that cancer is present, that it is operable, and that a total hysterectomy is necessary, then irradiation (the forerunner of surgical intervention) should be given during the intermittent rest period of 3 or 4 weeks necessary for complete healing of the cervix.

In the 3,000 routine studies made of vaginal smears taken from all patients over 20 years of age entering the Marshfield Clinic, Marshfield, Wis., 1.3% have shown carcinomas in situ. The age incidence ranged between 20 and 74 years, the average age being 40. These figures correspond to the statistics offered by other investigators and serve to support the author's contention that carcinoma in situ occurs in women whose average age is 10 years less than those with clinically obvious invasive carcinoma of the cervix. Here then, is a definite latent period. This is the time in which it is possible to study each case thoroughly and to make certain of the diagnosis by repeated biopsy studies. Some cancers of the cervix grow faster and more furiously than others, and this is also true of cervical carcinoma in situ. With this latent period in mind, a careful study of biopsy material taken at 6-week to 2-month intervals can be made until it is certain that the diagnosis is correct and that the case has been thoroughly evaluated, and that the proper therapeutic procedure has been decided upon. It is of the utmost importance that an accurate interpretation of the cellular structure be made by a well-trained pathologist, and equally important that the point at which the biopsy material is taken be chosen with care. The juncture of the 2 cervical epitheliums should be present in the biopsy specimen, as this is the point at which most cancers begin.

What is the solution to this problem? How can physicians detect carcinoma of the cervix while it is in an easily curable stage as carcinoma in situ? First, in the case of every female patient who comes for examination, regardless of the complaint, a vaginal smear should be taken, a full-view inspection of the cervix made, and, if desired, a Schiller test should be performed. If the results of these investigations are negative, there is no need to worry for another year. However, the patient should be warned that a clean bill of health at this time is no assurance for the future and that another thorough examination is indicated again in 1 year. Should the Schiller test give a positive result or the vaginal smear be positive for atypical cells, biopsy specimens should be taken at various points of the cervix, especially at the juncture of the stratified squamous epithelium with the columnar epithelium of the external os. Biopsies and vaginal smears should be repeated at monthly periods until the diagnosis is established one way or another. Certainly, any case in which a vaginal smear gives positive results should be carefully observed, as carcinoma has been reported in 95% of such cases. In the author's experience, in all cases in which carcinoma has been proved, the vaginal smear has given positive results.

Biopsy, biopsy, and more biopsy—for biopsy is the thing, and biopsy is the only method available for diagnosing carcinoma at a stage when it is almost 100% curable. (Internat. Col. Surgeons, Dec. 1952, P. F. Doege)

Pelvic Tuberculosis

Forty-five cases of pelvic tuberculosis studied and treated at the Harlem Hospital form the basis for the conclusions presented in this article.

The gross pathologic types found were (a) the ascitic; (b) the tubal; and (c) the advanced.

A gross classification of pelvic tuberculosis is presented which serves a threefold purpose: (a) to provide a knowledge of the gross appearance of pelvic tuberculosis which will make it possible to make a tentative diagnosis at the operating table; (b) to give a classification for reporting cases so that there is a common understanding of the type of pelvic tuberculosis under discussion; (c) to afford a basis for evaluating therapy to be used in the different types of pelvic tuberculosis.

Pelvic tuberculosis is usually secondary to pulmonary or gastrointestinal tuberculosis.

There is a great need for the development of some means of diagnosing pelvic tuberculosis before the case comes to the operating table. In the absence of this, a gross recognition of pelvic tuberculosis is important, because it is only after the abdomen is open that pelvic tuberculosis may be diagnosed in the majority of cases.

Contrary to the usual opinion, the ovaries were involved in 40% of the cases of pelvic tuberculosis in this series.

Total hysterectomy with bilateral salpingo-oophorectomy is the treatment of choice in the advanced progressive type of pelvic tuberculosis. Streptomycin promises to be the preferred treatment in the less extensive types.

The immediate postoperative results in the patients who had extensive surgery were excellent. The patients made a quick and uneventful return to a good general state of health, free of pelvic complaints. Eradication of the pelvic tuberculosis cured the local condition. When systemic tuberculosis was also present, its healing was enhanced by a lessening of the drain on the body's protective forces.

Seven patients with advanced progressive pelvic tuberculosis were treated by ablation surgery. Some of these have been followed as long as 5 years, and have remained free of symptoms and able to carry on productive lives.

The fever associated with tuberculosis is usually thought of as being moderate in amount, with an afternoon or early evening elevation. However, in several cases the authors found septic temperatures ranging as high as 104° F. This was especially true in the advanced progressive type. Antibiotics did not affect this temperature. The absorption of the toxic products resulting from the breakdown of the body tissue may be a contributing factor. (Am. J. Obst. and Gynec., Dec. 1952, M. L. Bobrow and J. A. Batts)

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Leontiasis Ossea

"Leontiasis ossea" is a name describing a hyperostosis of the bones of the face, especially of the jaws, and, occasionally, of the skull, It is of unknown etiology with a somewhat variable histologic picture. Consequently it is a condition that cannot be placed in any distinct category of bone disease. No definite time of onset can be determined but it is agreed that in the majority of instances it is at an early age. The disease usually become apparent about puberty and is slowly progressive. Proliferation of the bones of the nose leads to difficulty in breathing. The lacrimal ducts may be encroached upon, occasionally resulting in a suppurative dacrocystitis. The maxillary and frontal sinuses are sometimes almost obliterated by the encroaching deposits of bone. Headache is not infrequently present. Neuralgia, from encroachment upon foramina, is common. Proliferation about the orbit causes the eyes to become widely spaced and may produce exophthalmos. Compression of the optic nerve, through narrowing of the optic foramen, causes blurring of vision and, occasionally, blindness. Progressive deafness is sometimes encountered. The enlargement of the jaws results in marked malocclusion, interfering with mastication and often making speech difficult. As the disease progresses the overlying mucous membrane of the jaws becomes stretched causing marked prominence of the veins which stand out as striae. The skin also is stretched and the deformed face eventually becomes expressionless and shapeless.

All stages and variations of the disease may exist. There is rarely general involvement of the bones of the face and skull. Usually only one or several are implicated.

The histologic picture varies. In some instances there is osteoclastic resorption with new and irregular deposition of bone resulting in the mosaic design which is characteristic, according to Schmorl, of Paget's disease. In other cases, the dense fibrous whorling tissue that has replaced the marrow is a matrix for spicules of woven bone and the picture is one resembling fibrous dysplasia.

If one bone or several in a localized area are involved and the histologic picture conforms to that of Paget's disease, what else can the condition be called but localized Paget's disease? On the other hand, if the picture is one of whorled fibrous displacement of the marrow with woven bone spicules, would not the diagnosis be consistent with fibrous dysplasia?

There is a third possibility. A hyperplastic repair of a previous periosteitis or osteitis of infective origin may produce a histologic picture similar to fibrous dysplasia, or even be called fibro-osteoma. Knaggs describes one form of "leontiasis ossea" that he says is a creeping periosteitis ossificans, probably due to a low-grade infection.

From the histologic standpoint, therefore, "leontiasis ossea" may be classified either as a form of Paget's disease, ostotic fibrous dysplasia, or an exuberant repair of a former inflammatory condition—a sort of bone cheloid.

The roentgen examination is as variable as the histologic picture. The picture may be that of Paget's disease, fibrous dysplasia, osteofibroma, et cetera.

The fact that many physicians fail to examine the entire skeleton roentgenologically would account, in many instances, for the idea that "leontiasis ossea" is a monostotic disease. Because of the frequent histologic resemblance to fibrous dysplasia and because of the frequent youthful onset of the disease, Burrows believes that "leontiasis ossea" should be classified among the developmental conditions, although he expresses this thought with reservations.

The author's view is that leontiasis ossea is simply a sign of a variable number of diseases of the skeleton. The diagnosis can only be made from: (a) the history; (b) biochemical studies which usually show no change except in the case of active Paget's disease when the alkaline phosphatase is raised; (c) complete skeletal roentgen studies; (d) histologic examination of a large number of areas of the lesion. Even then, this disease may not be classified.

Naturally where the etiology of a disease is unknown, or, at best, one of conjecture, the treatment can only be palliative. Surgery to correct the deformity, and to relieve the pressure symptoms produced by encroaching bone, is all that can be done. Because of the disastrous results that have followed surgical interference in fibrous dysplasia in the very young, it is advisable, whenever possible, to delay surgery until well past puberty. In properly selected cases, and at the proper time, much can be done for these people. (Oral Surg., Oral Med., and Oral Path., Jan. 1953, L. R. Cahn)

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Annual Report on Surgery of the Biliary System and Pancreas for 1951

The annual report on surgery of the biliary system, liver, and pancreas is presented to demonstrate the type and number of procedures performed on these organs as well as the risks involved during the year 1951.

Surgical procedures on the biliary system and pancreas were performed on 1,767 patients with a total of 23 hospital deaths, a mortality rate of 1.3%. Though this figure varies from year to year, it has remained fairly constant in past years.

The causes of death were usually multiple, often terminating in bronchopneumonia. Cardiac failure was responsible for only 2 deaths and renal failure for 1. The chief causes of death as a result of operation alone were hepatic insufficiency and postoperative shock. Peritonitis, metastatic carcinoma, pancreatic necrosis, hepatic necrosis, and pulmonary embolism were responsible for only 1 death each. The number of deaths due to pulmonary embolism showed a marked decrease. This may, in part, be due to

the increasing use of prophylactic dicumarol therapy in many cases of cholecystectomy, provided there is no exploration of the common duct with T-tube drainage. When dicumarol is used, administration is usually begun 48 hours after operation and continued until the patient's dismissal from the hospital. Daily determinations of prothrombin time are done to insure proper dosage. The deaths in this group of patients were not confined to the older age group, because a third of them were of patients less than 50 years of age, and more than half of these were of less than 40. The risk for the jaundiced patient has always been higher than for the average; male patients had a higher mortality rate than female.

Cholecystectomy for benign lesions of the gallbladder was performed on a total of 1,227 patients with 4 deaths, a mortality rate of 0.3%. It is gratifying to note that no deaths occurred in the 71 cases in which cholecystectomy was carried out for acute cholecystitis. This more than justified the procedure of selective early operation for acute disease of the gallbladder, a practice which has been followed at the Clinic for many years with good results. At times the condition of the patient or the local situation about the gallbladder may preclude removal, and then cholecystostomy may be done. Cholecystostomy was performed in 38 cases last year with 2 deaths. Seven patients had acute and 18 had chronic cholecystitis. An additional 13 had other benign and malignant conditions requiring drainage of the gallbladder.

Exploration of the common bile duct was carried out in 313 cases. Stones were found in 46.6% of these (146 cases), or 11.9% of all cases in which cholecystectomy was carried out. These figures vary little from year to year. The indication for exploring the common duct was the known or suspected presence of stones in the common duct. Stones may often be palpated in the common duct. It is of interest to note that in 1951 exploration of the common duct was carried out with no increase in risk, in contrast to preceding years. In the past years also, the removal of stones from the common duct was accompanied by an increased risk as compared to choledochostomy alone. The figures for 1951 show no deaths in this group. T-tube drainage was used whenever the common duct was explored. The tube was removed in 2 to 3 weeks after a cholangiogram showed the ducts to be normal.

There were 180 operations performed in 1951 for benign lesions of the bile ducts with a mortality rate of 4.4%. The number of operations was increased over that of the preceding year and a considerable proportion of this increase was due to the greater number of strictures of the common duct which were referred for repair. The increased mortality rate was largely due to the jaundice and hepatic damage present. Deaths were due either to hepatic insufficiency or to shock secondary to hemorrhage caused by the deleterious effect of the damaged liver on normal clotting factors.

The operation most commonly performed at the Clinic for stricture of the common duct was some form of biliary intestinal anastomosis. When the lower end of the common duct was readily found, end-to-end anastomosis was

made over a T-tube or a vitallium-tube splint. Although vitallium tubes may become plugged in from 1 to 5 years and have to be removed in about 50% of the cases, still, where they have been removed, a large, well-epithelized duct remains which would appear unlikely to stenose.

Thirty operations were performed for malignant lesions of the gallbladder and bile ducts with 2 deaths, a mortality rate of 6.7%. Characteristically, the proportion of cases for which only a palliative procedure was done is high. In only 9 cases of the 30 could resection be performed, 5 involving the gallbladder and 4 the bile ducts. The risk of palliative procedures and of exploration alone was high because of jaundice and hepatic involvement present in most cases. The survival rate, however, in malignant lesions of the gallbladder, except for the rare small papillary lesions, continued to be disappointing.

Of 313 procedures performed for lesions of the liver, needle biopsy was by far the most frequent. Exploration with biopsy was also frequently employed. Needle biopsy was much more reliable in patients with cirrhosis, hemochromatosis, and primary or metastatic hepatic malignant lesions than in other patients. On occasions such conditions as sarcoidosis, amyloid disease, and tuberculosis were discovered by biopsy.

Among the other procedures performed for lesions of the liver were portocaval shunts, hepatic arterial ligation, excision and drainage of cysts, and suture of lacerations of the liver.

There were 156 operations performed in 1951 upon patients with lesions of the pancreas. The mortality rate of 3.8% was lower than it has been in past years.

The surgical treatment of pancreatitis still presented some interesting problems. Prolonged biliary drainage with a T-tube with or without transduodenal sphincterotomy was employed in the majority of the cases. The T-tube remained in the duct for from 6 months to a year. Radical pancreatoduodenectomy has been receiving increased attention in the literature in the treatment of chronic relapsing pancreatitis. The authors believe that more conservative measures often will be beneficial and should be tried first. Following this, if repeated attacks occur and the disease appears to be located chiefly in the head of the pancreas, then the Whipple operation gives good results. Resection of the body and tail of the pancreas may also be employed successfully when the disease is confined to this area. The authors' experience with total pancreatectomy was uniformly disappointing for diffuse chronic pancreatitis with calcification and intolerable pain. They found that drainage or marsupialization of pancreatic pseudocysts still gave good results, and they did not abandon this in favor of internal drainage to the stomach or intestine. The latter is best confined to true cysts, excision of which is not possible.

Eighty-two operations were performed for carcinoma of the pancreas, a considerable increase over the figure for 1950. As in the past, however, the large majority of these lesions were not resectable. One death occurred in this group due to severe postoperative hemorrhage and shock. Although

the number of 5-year survivors from this procedure was few, it still remains the best method available for treatment of carcinoma of the pancreas. Biopsy with the Vim-Silverman needle can often be used to advantage to substantiate the diagnosis of carcinoma before this procedure is undertaken. A negative needle biopsy, however, should never be relied upon to rule out the presence of carcinoma. (Proc. Staff Meet., Mayo Clin., Dec. 31, 1952, J. M. Waugh, W. Walters, H. K. Gray, and J. T. Priestley)

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Report of Patients

The rate of admission to the sick list for all causes for active-duty personnel of the Navy and Marine Corps increased slightly from 316.5 in September to 319.0 per 1,000 in October. This rate is the third lowest of the year so far. While there was little difference in the total rate from that for September, several changes occurred in the rates for the various geographical areas. An increase in morbidity in noncontinental areas and aboard ships of the Atlantic Fleet was offset by a decline in continental United States.

A total of 20,997 persons were on the sick list in naval medical facilities at the end of October 1952. This is the lowest end of the month patient census thus far in 1952. It is 16% lower than the peak census of 25,113 at the end of February 1952.

The patient load in naval hospitals (including hospital ships) reached a new low for the year in October 1952. For the first time in 1952 the average patient census was below 19,000. The average of 18,931 for October is the lowest since December 1950. It is also 15% below the peak census for 1952 occurring in February.

A total average hospital patient census in October was 234 below that for September, a decline of 1.2%. The average census for both Navy and Marine Corps patients and supernumeraries declined at nearly the same rate. (Statistics of Navy Medicine, Jan. 1952)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Navy Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.

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Quinidine in the Treatment of Chronic Auricular Fibrillation

Ever since Frey introduced quinidine in 1918 as a valuable agent in the treatment of auricular fibrillation, considerable controversy has arisen regarding the merits of the drug in this disorder. Similarly, conflicting opinions have been expressed concerning the hazards and the advantages of the reestablishment of a normal sinus rhythm.

For many years it was thought that auricular fibrillation was merely the natural sequela, frequently the terminal event, in the life cycle of a failing myocardium and that it played an insignificant role in the final outcome of such a disease process.

There has been enough clinical and experimental evidence presented in the last few years to support the concept that persistent, long-standing fibrillation of the auricles is not an innocuous mechanism, despite the fact that some patients live in apparent comfort for many years with a ventricular rate well controlled with digitalis.

In animal studies it has been shown that the cardiac output is diminished by about 40% when auricular fibrillation is established. Several workers have presented reliable evidence of a decrease in blood flow with the onset of this arrythmia. Blumgart concluded that in patients with atrial fibrillation the increase in ventricular rate after exercise is greater and its return to the previous resting state is slower than in individuals with a sinus rhythm.

Several reports demonstrate that cardiac enlargement and congestive heart failure can occur in patients with this dysfunction in the absence of any evidence of organic heart disease, and that such a decompensation can be reversed with restoration of sinus rhythm.

Fahr mentioned several cases of athletes performing well in competitive endeavors despite the presence of a mitral stenosis. As soon as auricular fibrillation was established, however, these same individuals developed signs of cardiac decompensation and became chronic invalids who could at best carry out duties entailing only a minimum of exertion.

Another of the dreaded and grave dangers of this arrythmia is pulmonary and systemic embolization.

Two of the major objections usually offered to the use of quinidine in chronic auricular fibrillation are the possibility of sudden death and embolism. Most of the authorities on this subject are convinced that these hazards have been unduly overemphasized and have prevented the use of a drug which, when handled rationally, often proves life-saving.

Up to now the authors have studied 14 unselected cases. Sinus rhythm was reestablished in 10, or 71%. Five of the entire group were treated while ambulatory with only one conversion. Two of the other four were subsequently hospitalized and converted on a much smaller dosage than that taken while ambulant.

Quinidine was administered at 4-hour intervals day and night after the initial sensitivity test dose. All patients were started on a 0.2 gm. schedule and the drug was progressively increased by 0.1 gm. per dose every 48 to 72 hours until sinus rhythm was restored or evidence of toxicity appeared. If regular rhythm was discernible the drug was usually reduced rapidly first by prolonging the time interval from 4 to 6 hours and after 48 hours by actual decrease in the amount of each individual dose until a satisfactory maintenance program was achieved.

With one exception all cases were digitalized prior to initiation of therapy.

The contraindications to the use of quinidine in auricular fibrillation form the nucleus of a highly controversial issue. Generally, it may be said that quinidine is contraindicated in patients with sensitivity to the drug and in the presence of an auriculoventricular dissociation. It would seem that the drug should be used with caution in certain cases of congenital heart disease where the appearance of a normal rhythm may alter unfavorably the already established circulatory dynamics. The presence of an intraventricular conduction defect or a bundle branch block should not be a deterrent to the use of quinidine. However, these patients should be watched closely and the drug increased slowly.

The duration of the fibrillation, the age of the individual, or the severity of the heart disease as determined by the size of the heart, the appearance of the electrocardiogram, vital capacity, venous pressure, and circulation time studies and the incidence of cardiac failure appears to have no significant influence on the outcome of therapy with quinidine.

A detailed analysis of the various individual cases is presented with emphasis on the therapeutic problems encountered and their management and with notations on the final results.

It appears that intensive quinidine therapy in an ambulatory patient is a much too hazardous undertaking. Hospitalization should be a treatment prerequisite because it provides the only satisfactory way in which constant observation of the patient with frequent electrocardiographic evaluation can be effectively accomplished. (Ohio State M. J., Jan. 1953, G. S. Belaval and H. J. Barker)

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Dental Training Available

Civilian Graduate and Long Postgraduate Courses

A limited number of dental officers may be enrolled in long postgraduate and graduate courses of instruction in civilian institutions commencing in the Fall of 1953, in the following subjects: Bacteriology; Pathology; Prosthodontia; Oral Surgery; Oral Medicine; Periodontology; and Biochemistry.

Dental officers (USN) are requested to inform the Chief, Bureau of Medicine and Surgery, via official channels, by 16 March 1953, if interested in assignment for a period of 1 year to a course in any one of the aforementioned subjects. Dental officers considered eligible for such training will be instructed by BuMed to submit applications, in accordance with Article 6-82(1), Manual of the Medical Department.

Dental Residency Training and Advanced Training in a Dental Specialty

Residency training and advanced training courses of 1 year's duration will become available early in July 1953 at selected hospitals and dental activities in the specialties of dentistry as follows:

Course	Name of Activity
Oral Surgery (Residency)	U. S. Naval Hospitals: St. Albans, N. Y. ; Philadelphia, Pa. ; Portsmouth, Va. ; Great Lakes, Ill. ; Oakland, Calif, ; Chelsea, Mass. ; San Diego, Calif.
Prosthodontics (Advanced)	U. S. Naval Dental Clinics: Brooklyn, N. Y. ; Naval Gun Factory, Washington, D. C. ; Pearl Harbor, T. H. ; Camp Pendleton, Calif. U. S. Naval Training Centers: Great Lakes, Ill. ; San Diego, Calif. ; Bainbridge, Md. U. S. Naval Station, Treasure Island, Calif. U. S. Marine Corps Recruit Depot, Parris Island, S. C. U. S. Naval Receiving Station, Naval Base, Norfolk, Va.
Periodontics (Advanced)	U. S. Naval Dental School, NNMC, Bethesda, Md. U. S. Naval Dental Clinic, NGF, Washington, D. C.
Oral Pathology (Residency)	U. S. Naval Dental School, NNMC, Bethesda, Md. Armed Forces Institute of Pathology, Washington, D. C.

Dental officers (USN) are requested to submit applications in accordance with Article 6-82(2), Manual of the Medical Department not later than 16 March 1953, if they wish to be considered for this type of training. Dental officers already in residency or advanced training courses will be considered for extension of training to the second year level if such requests are received in the Bureau by 16 March 1953.

Specialized Courses at U. S. Naval Dental School

Specialized courses in Oral Surgery and Prosthodontia of 6 months' duration will convene on 1 July 1953, at the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Md. Eligible dental officers are those who have completed the General Postgraduate Course, Naval Dental School, and 1 year's residency training in Oral Surgery of 1 year's advanced training in Prosthodontia. Consideration will be given to all requests received in the Bureau by 16 March 1953. (DentDiv, BuMed)

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List of Recent Reports Issued by the Aviation Medical Acceleration Laboratory, Naval Air Development Center, Johnsville, Pa.

The Influence of Footward Acceleration Upon the Fluid Systems of the Intracranial Cavity. NM 001 060.02, 8 Mar 1951.

The Influence of Footward Acceleration Upon the Fluid Systems of the Intracranial Cavity. NM 001 060.02.02, 11 Sep 1951.

A Study of Fluid Shifts in Small Rodents Exposed to Accelerative Stress. NM 001 060.05.01, 7 Apr 1952.

Studies on Cerebral Physiology of Monkeys at 12 Negative G. NM 001 060.03.03, 21 May 1952.

Development of a New Method for Continuous Measurement of Cerebral Blood Flow in Humans Under Acceleration. Phase I. NM 001 060.03, 15 Aug 1952.

The Activation of Aerobic Phosphorylation by the Addition of Xanthines and Analogous Compounds to the Inhibited Enzyme Systems. NM 001 060.03.04, 9 Dec 1952.

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From the Note Book

1. The Navy Management Council has singled out the Bureau's publication, "Statistics of Navy Medicine," as an outstanding example of a good management report. Under Secretary Whitehair commended the Surgeon General and the Bureau staff members responsible for the publication for "a job well done." (TIO, BuMed)

2. Honorary membership in the Brazilian Military Medical Academy was bestowed upon Captain C. J. Stuart, MC, USN, Commanding Officer of the U. S. Naval Hospital, Portsmouth, Va., at a recent ceremony at that hospital. Commander Geraldo Barroso of the Brazilian Navy, and Vice President of the Academy, highest military medical academy in that country, presented the award. (TIO, BuMed)

3. Illustrative cases of hepatic amebiasis, pulmonary amebiasis, brain abscess, and gastrointestinal complications are presented in the American Journal of the Medical Sciences, Dec. 1952, Capt. M. J. Freedman, USAF (MC) and Col. E. A. Cleve, MC, USA.

4. A modification of the Potts bulldog clamp for adaptation to portocaval shunt procedures and the technic for its application is described in Surgery, Jan. 1953, Maj. E. J. Jahnke, USAF (MC), Lt. Col. F. N. Cooke, MC, USAR, and Brig. Gen. S. F. Seeley, MC, USA.

5. The contraindications to air travel are cystic disease of the lung, recurrent spontaneous pneumothorax, high-pressure artificial pneumothorax, acute upper respiratory infections with exacerbations of chronic lung disease, manifest coronary insufficiency, failure of the right side of the heart, and recent hemoptysis. (Dis. Chest, Jan. 1953, B. Gordon)

6. An excellent symposium on medical writing appears in Mississippi Valley Medical Journal, Jan. 1953.

7. A report of mass carbon monoxide poisoning in submarine personnel appears in Archives of Industrial Medicine and Hygiene, Nov. 1952, Cdr. H. J. Alvis, MC, USN and C. W. Tanner, HMC, USN.

8. The author presents and advocates a new method in the repair of facial defects through the use of preserved meniscal cartilage. The meniscus of the knee as a refilling material is believed destined to replace the methods which use rib cartilage, either autogenous or homologous, fresh or preserved. (Plast. & Reconstruct. Surg., Dec. 1952, L. Mir y Mir, Barcelona Spain)

9. An article discussing the selection and medical management of patients with mitral stenosis treated by mitral commissurotomy appears in Circulation, 1953, G. C. Griffith, et al.

10. The usefulness of peripheral nerve block in general surgical practice with its indications and the technics preferred by the author is discussed in the Journal of the International College of Surgeons, Dec. 1952, M. B. Jorgensen.

11. The sharp drop of urinary estrogens under cortisone therapy like the drop of urinary 17-ketosteroids, seems to be characteristic of congenital or acquired adrenal hyperplasia. This fact is of interest in the differentiation of adrenal hyperplasia and adrenocortical tumor. (J. Clin. Endocrinol., Dec. 1952, C. J. Migeon and L. I. Gardner)

12. Experience in 46 cases of encephalomyelitis following rabies vaccination in New York City from 1928 to 1951 is summarized. The risk of rabies from a bite is shown to be greater than that of encephalomyelitis from vaccination. Criteria for use of vaccines, avianized vaccine, and antirabies serum are discussed. (J. A. M. A., 17 Jan. 1953, E. Appelbaum, M. Greenberg, and J. Nelson)

13. Lieutenant Commander Robert K. Moxon, MC, USN has recently been certified in Internal Medicine by the American Board of Internal Medicine. (TIO, BuMed)

14. Surgical procedure in tumors of the parotid gland with preservation of the facial nerve and prevention of postoperative fistulas appears in Archives of Surgery, Dec. 1952, D. Riessner, Zagreb, Yugoslavia.

15. A new type of electric flowmeter, capable of measuring the air currents in a still room or the rapid flow of fluids in pipes has recently been developed by H. P. Kalmus at the National Bureau of Standards. This device utilizes the change in velocity of sound waves as a measure of fluid flow. A characteristic of the flowmeter makes the unit applicable to the measurement of blood flow in the aorta or for the detection of the flow of chemical in a closed system, for example, the coolant in a chain reactor. (Summary Technical Report 1748, N. B. S., Jan 1953)

16. Methods dealing with insulin therapy hydration, and electrolyte, glucose, and alkali therapy in the treatment of diabetic coma, are described in Annals of Internal Medicine, Dec. 1952, G. G. Duncan.

17. The moderate hypotensive and symptomatically beneficial effects of Rauwolfia serpentina in hypertensive patients is discussed in the New England Journal of Medicine, Jan. 8, 1953, R. W. Wilkins and W. E. Judson.

18. Cytology in cancer detection can best serve the community in a central laboratory devoted exclusively to that subject and maintained by capable cytologists and technicians. (J. M. Soc. New Jersey, Jan. 1953, H. B. Miller, C. R. Moog, and F. P. Lee)

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BUMED INSTRUCTION 6224.2 19 Jan 1953

From: Chief, Bureau of Medicine and Surgery
To: All Stations Continental

Subj: Mobile photofluorographic and roentgenographic bus units; policy relative to

1. This instruction sets forth the policy relative to the control of mobile photofluorographic units assigned to naval districts. BuMed C/L 50-5 is cancelled.

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BUMED INSTRUCTION 7330.1 16 Jan 1953

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals and Hospital Ships

Subj: NavMed-36, Ration Record

Ref: (a) Art. 24-30, ManMedDept
(b) Art. 24-32, ManMedDept
(c) Par. 53225, BuSandA Manual
(d) Par. 54025-2c(1), BuSandA Manual

Encl: (1) Detailed Instructions for Preparation of NavMed-36, Ration Record

1. This instruction consolidates existing procedures and instructions for the preparation and submission of subject report. Enclosure (1) contains detailed preparation instructions. BuMed C/L 51-116, 52-6, and 52-59 are cancelled.

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BUMED INSTRUCTION 6320.7 16 Jan 1953

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Regularly Assigned

Subj: Medical and hospital care for unmarried minor children of deceased military personnel

Ref: (a) Chapter 21, ManMedDept

1. The unmarried child or children under 21 years of age of deceased military personnel is or are eligible for medical and hospital care on the same basis and to the same extent as is now or may hereafter be provided for widows of such personnel. BuMed C/L 51-72 is cancelled.

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BUMED NOTICE 6250 16 Jan 1953

From: Chief, Bureau of Medicine and Surgery
To: All Shore Stations

Subj: Conversion of the Todd Type "E" Smoke Generators into an insecticide dispersing apparatus

1. This instruction provides information on the efficient utilization of obsolete smoke generators for insecticide dispersal. Plans and detailed instructions for conversion and operation may be obtained from the U. S. Navy Preventive Medicine Unit No. 1, Naval Air Station, Jacksonville, Fla.

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BUMED INSTRUCTION 6210.2 16 Jan 1953

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Quarantine regulations; rinderpest and foot-and-mouth disease

Ref: (a) General Order No. 20, as amended by Change No. 1

1. This instruction prohibits the importation of certain products from countries where either foot-and-mouth disease and/or rinderpest exists. BuMed C/L 51-88 is cancelled.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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BUMED INSTRUCTION 6150.7 16 Jan 1953

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Regularly Assigned

Subj: Health Record; general information concerning

Ref: (a) Manual of the Medical Department

1. This instruction announces the adoption of several new letter-size forms which replace respective 3-3/4" x 9-1/4" forms now in use. Certain new procedures in the maintenance of the Health Record are inaugurated. Various recently established procedures are clarified and reiterated. BuMed C/L 52-13 and 52-52 are cancelled.

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PREVENTIVE MEDICINE SECTION

Preventive Medicine in Action

A well-organized and vigorously prosecuted program for prevention of disease, disability, and death is essential to the success of the mission of the Department of the Navy. This is particularly true aboard ship. It is essential that every naval medical officer maintain continuous observation of disease or disability in personnel of his ship or station and determine the causes, with a view to recommending measures leading to minimizing or removing the causes. This requires periodic surveys or inspections of areas where personnel are operating, messing, living, or seeking recreation, for the purpose of discovering and recommending practical corrective measures. Written orders and directives proposed by the medical officer and bearing the authority of the commanding officer should designate standards based on current concepts of sanitary engineering and public health practices, should specify

inspections and surveys, and should spell out specific responsibilities of officers in the command, as necessary, to maintain health standards directed toward prevention and control of diseases and injuries.

Naval medical officers must keep informed of the recognized standards and procedures relating to preventive medicine, industrial hygiene, safety, and all environmental factors which may affect the health of both civilian and military personnel of the Naval Establishment. These details will be found in the Manual of the Medical Department, Manual of Naval Hygiene and Sanitation, Navy Civilian Personnel Instructions, and pertinent BuShips, BuDocks, BuSandA, and MarCorps manuals, bulletins, and technical publications. Certain Federal and military specifications are of particular interest to the medical officer. These are listed in the General Stores Catalogue; there are also periodical indexes. This information is available from your supply officer.

Inspections should include (a) formal (as prescribed by the commanding officer) and (b) informal (unscheduled) working surveys essential to obtaining and recording factual data on operations and standards. The following types and frequency of inspections and surveys are suggested as minimal:

(1) Food-supply, food-equipment, and food-service areas.—Food supplies (especially fresh provisions) and equipment should come from approved sources, and be procured in accordance with appropriate Federal or military specifications. The medical officer must know the source, and, if not for general mess (provided under the Market Center System), he must provide inspection service prior to procurement, and subsequent monthly or quarterly inspections to insure continual maintenance of sanitary standards. These inspections are especially necessary in procurement of fresh provisions, bakery goods, et cetera, for "private messes" such as Navy and Marine Corps exchanges and officers' and chief petty officers' messes. Civilian cafeterias must be given the same consideration as military messes. Daily inspections are necessary in some instances, while weekly unscheduled inspections are essential to maintain sanitary standards in galleys, mess halls, sculleries, storerooms, refrigerators, and all food-service areas. All food-service personnel must be given pre-employment physical examinations and weekly periodic checks for personal hygiene and subjective symptoms of illnesses.

(2) Water supplies. —Dependent on source and whether the activity is ashore or afloat, the maintenance of a potable water supply requires that the medical officer make an initial survey to determine source, potential source of contamination by backflow or cross-connections with nonpotable supplies, and present policy on repurification, testing, et cetera. Afloat, constant checks, certainly not less than weekly, should be made with respect to distillation plant and operating personnel. Each time water is taken aboard ship the medical officer should make sure the potable water is not contaminated by careless handling or cross-connection of lines, is properly chlorinated

when necessary, and that adequate samples for bacteriologic analyses are taken where quality control is doubtful. These standards are well defined in the Manual of Naval Hygiene and Sanitation and in fleet directives.

(3) Industrial procedures ashore or afloat. —Inspections of these procedures should be made at regular intervals as required.

(4) Garbage and refuse disposal. —Inspection should be made by the medical officer at least monthly for large shore stations to insure that all wastes are collected and disposed of in such a manner as not to— (a) Contaminate drinking water. (b) Give rise to a public health hazard by being accessible to insects or rodents or other possible carriers that may come in contact with food or drinking water. (c) Pollute or contaminate the waters of any bathing beach, shellfish-breeding ground, or stream used for domestic water supply or recreational purposes. Daily observations should be made of waste-disposal practices aboard ship.

(5) Miscellaneous recreational or other facilities. —Laundry facilities, barber and beauty shops, brigs, swimming pools, and bathing places should be checked weekly (brigs daily when occupied) to insure that adequate sanitary regulations are posted and complied with. For detailed standards for these facilities, refer to appropriate sections of the Manual of Naval Hygiene and Sanitation, the Navy Ships' Store Handbook for Laundry Operation, and the Brig Manual.

(6) Habitability in general. —Habitability standards encompass living and berthing standards both ashore and afloat. Heating, lighting, and ventilation in berthing spaces and working spaces affect habitability. Crowding is detrimental to health and morale. The hazard of the spread of communicable disease is increased when the number of occupants in a single space is increased. The medical officer should make weekly inspections afloat, and not less than monthly inspections ashore, to detect and warn against overtaxing of living and messing or sanitary facilities. In troop transports and other ships carrying passengers, daily attention should be given these fields of inspection. The standards are found in the Manual of the Medical Department, the Manual of Naval Hygiene and Sanitation, or pertinent chapters in BuShips Manual, or Specifications for Building Vessels of the U. S. Navy. Ashore, appropriate BuDocks design criteria or technical publications apply.

It is essential that discrepancies noted in all inspections be reported in writing to the commanding officer with appropriate recommendations and that copies be maintained on file in the medical department spaces. Summary of deficiencies noted should be entered in the Journal of the Medical Department.

General Sanitation

New Form for Bacteriologic Examination of Water

The Department of Defense has approved Form DD686 as the standard form for reporting bacteriologic examinations of water for the Armed Services. These forms will be available in the near future and may be procured through normal Medical Department channels. Mention is made here in order to give the field an advance note regarding this standard form. Instructions for use will be issued when the forms are available.

Training and Visual Aids

NavMed P-1333, "Instructor's Guide—Sanitary Food Service"

Because the number of copies of NavMed P-1333, "Instructor's Guide—Sanitary Food Service," was limited by the initial printing, it has been the intent of BuMed to limit distribution to the larger ships and stations until additional copies can be printed. The book is meant for use by instructors and is not a general reference.

BuMed letter BUMED-7221-FES-eal L16-3/J25 of 16 July 1952 to district, river and Marine Corps commands ashore, and type commands afloat, indicated the initial distribution of the Guide. This letter requested addressees to inform BuMed of further distribution deemed necessary within their respective commands—the requested copies then to be forwarded to these commands and distributed to the activities which would conduct training programs for food handlers. Preventive Medicine Notes (June 1952) stated that requests for this publication were not indicated, and the Medical News Letter (17 October 1952) stated that single orders from individuals could not be filled. In spite of these instructions many requests from individual ships or stations have been received at BuMed, some of them duplicating distribution previously made. In some instances 1 ship requested as many as 10 copies without justification. Many small ships requested 2 copies.

It is necessary to continue a most careful distribution of NavMed P-1333 so that the best use will be made of the remaining copies. Individual requests from ships and stations will not be approved by the Bureau of Medicine and Surgery. They should be sent to the appropriate command (SNDL—Part I, 22, 23, 24, 41B; Part II, F2, G3, G3B, G3C, G3D, and G3E) and consolidated. The over-all requests for the command should explain the need for this additional distribution. Type commanders should limit their requests to copies immediately needed for joint use by small ships in the command, where practicable. These commands may advise BuMed of the number of copies needed to complete distribution to all ships or stations having a Medical Department representative aboard. This information will be most helpful in justifying reprinting of the Guide.

BuMed is holding requests, submitted on NavExos-158 (3-50), for 200 individual copies of this publication. Activities that have submitted requisitions which they believe should have been filled and received by 1 February 1953 are requested to resubmit them to the appropriate district, river, air, or Marine Corps Command for activities ashore to type command afloat, for approval, consolidation, and justification in accordance with the preceding paragraph.

Communicable Disease Control

Filariasis in Samoan Navy Dependents in Hawaii

A study of filariasis among 900 Samoans migrating to Hawaii is reported in a paper by LT. W. L. Barnet (MC) USNR and CDR. C. M. McCandless, Jr. (MC) USN, presented at a meeting of naval medical department officers at Tripler Army Hospital on Oahu. The occasion for the investigation was the movement of this sizable native population to an area of generally higher sanitation and living conditions. In addition to the examination of blood samples for microfilaria, the investigation included chest photofluorography and Kahn and Kolmer tests. The over-all study was performed cooperatively by members of Navy EDCU #6, naval shipyard dispensary personnel, and the Public Health Department.

Of 891 Samoans studied, 156 (17.5%) were positive for filariasis. A selected group of 26 Navy dependents were treated with Hetrazan. The microfilaria counts in these patients ranged from 1 to 849 per cc. before treatment. This level showed a definite and prompt decrease after treatment was initiated. After 1 week of treatment 6 specimens were negative and the highest count was 22. After 3 weeks, 16 specimens were negative, the highest count 4. Further counts were obtained during the 3 weeks following cessation of treatment, and another course of 10 days was given each case showing any microfilariae. Repeat counts will be done at 3-month intervals and treatment given as indicated.

Occasional reactions during treatment included general malaise, chills, fever, and headache, mostly in the first 4 days; some nausea, vomiting, swelling of the hands, and papular rash in this early period; and some axillar swelling on the sixth and seventh days. Antihistaminic agents were given in several cases with apparent relief. In no case was therapy stopped because of the symptoms.

The authors conclude: "This form of therapy is easily given to large numbers of people, and is proving effective in reducing microfilaria counts. Hetrazan would seem to be the ideal treatment for a group such as the Samoans in Hawaii, who by selection before migration have minimal clinical evidence of the disease, and who are now removed from the source of their infestation. The therapy is not only a possible prophylactic measure for the Samoans

against development of elephantiasis, but of greater importance, is a disease control measure for the protection of the rest of the population who live in the same areas as the Samoans."

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Commendation for Filariasis Survey

LCDR. Alan C. Pipkin (MSC) USNR has been commended by the Surgeon General for his work in carrying out a filariasis survey of the Trust Territory, Pacific Islands, during 1951 and 1952. "In the face of great transportation and logistic problems and at considerable personal sacrifice," declares the commendation, "you carried on valuable research in 44 separate island communities throughout an extensive geographical area. This devotion to duty and to the advancement of science is most commendable and exemplary. The comprehensive data on the distribution and incidence of filariasis and its vectors in the Trust Territory which your efforts have produced, add materially to the knowledge of this disease and its control."

Insect and Rodent Control

FSA Recommendations on Insecticides

During the past few years, there have been slowly increasing indications from several scattered areas in the world that some species of Anopheles are developing resistance to DDT. Some evidence has been developed by workers of the Tennessee Valley Authority that Anopheles quadrimaculatus may be developing resistance to DDT in some localities in which DDT has been used continuously for more than 5 years. However, in general this species does not appear to have developed resistance to DDT to a degree which would significantly affect control operations. The continuation of previously adopted procedures for the control of A. quadrimaculatus is recommended for 1953, namely, the use of 5-percent-DDT emulsion residual sprays in homes, and a 5-percent-DDT emulsion or a 5-percent-DDT oil solution for outdoor space spraying to control adult mosquitoes.

Such data as are presently available on the development of resistance by both mosquitoes and flies indicate that resistance develops more rapidly when both the larval and adult stages are exposed to chlorinated hydrocarbon insecticides. Therefore, it is recommended that larviciding with DDT or other chlorinated hydrocarbons be employed for the control of A. quadrimaculatus only in those situations where this method offers the only practicable means of control. Where larviciding is indicated, the recommended procedures are the use of 0.05 pound of DDT in 1 gallon of fuel oil per acre for larviciding with hand sprayers, and the use of 0.05 to 0.10 pound of DDT per acre, applied

as a 20-percent solution in methylated naphthalenes, such as Velsicol NR70 or Sovacide 544B, for airplane treatments.

The only known mosquito vector of disease which appears definitely to have developed a high degree of resistance to insecticides in the United States is Culex tarsalis in California. Observations by the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture indicates that in some localities this species has developed varying degrees of resistance to a number of chlorinated hydrocarbons, including DDT, toxaphene, lindane, aldrin, and heptachlor applied as space sprays.

Against some species of pest mosquitoes which have not developed resistance to DDT, barrier-strip residual spraying with DDT around the outside of individual premises has given effective control. In the Savannah, Georgia area DDT emulsions applied at the rate of 5 lb. per acre to the outside of houses, and to shrubbery, grass, and other vegetation for a distance of approximately 120 feet around the houses, gave satisfactory reductions against the common species of salt-marsh mosquitoes for about 5 weeks. It is recommended that similar procedures be used experimentally in situations where other control measures are not more feasible, as for example, to protect individual premises in irrigated agricultural areas. On the other hand, barrier-strip spraying around cities and towns has proved ineffective in preventing invasion of rice-field mosquitoes, Psorophora confinnis and P. discolor, and salt-marsh mosquitoes. Therefore, this method is not recommended as a general mosquito control practice. (Press release, Technical Development Branch, Communicable Disease Center, PHS, FSA, Savannah, Ga, Dec. 23, 1952)

Venereal Disease Control

The Case Against Punishment

For more than a century service men were punished in one way or another for acquiring venereal disease. This is now considered by the Navy and the Marine Corps as both illogical and incompatible with the control program. They realize that no man willfully sets out to acquire any infectious disease—whether it be measles, smallpox, yellow fever, gonorrhea, syphilis, or any other—and they do not regard such acquisition as a crime. They put venereal disease on the same plane as other communicable diseases.

While direct, major punishment of the man who acquires venereal disease is now prohibited, some more subtle and indirect punitive measures are undoubtedly still used. These are contrary to current directives if the man reports his infection and accepts treatment. The only valid punishment is for concealment of disease.

The following arguments against punitive measures, presented to Congress by military and civilian officials almost a decade ago, are just as con-

vincing and valid today. They resulted in the repeal of the old laws which required a man to forfeit his pay while on the sick list for venereal disease.

1. Punishment breeds concealment. —Docking a man's pay because of venereal disease, or punishing him in any way, does not actually reduce incidence of the disease, but promotes concealment, self-treatment, or treatment by nonmilitary personnel. Any apparent reduction of the diseases is largely a paper reduction. This is what usually happens: After imposition of restriction, the venereal disease incidence appears to drop sharply. But analysis reveals the decreased incidence is only in the reported cases of gonorrhea, which is more easily cured—at least the objective symptoms more readily subside, even by quack treatment. The man takes a chance on being cured unofficially and does not report the infection. But syphilis cannot be cured so easily; its treatment is longer and more costly. So syphilis cases are reported as before. These statements are based on actual results of a study which demonstrated that the true venereal disease rate in a command is not decreased but at times even increased by punitive measures; only the number of reported cases of gonorrhea drops.

2. Punishment breeds treatment from unauthorized sources, which may have dangerous results. —Treatment by nonmilitary personnel may be inadequate; post-treatment follow-up measures are usually not taken. Consequently, treatment-resistant cases and relapses occur more frequently, and result in far more serious conditions.

3. Concealment precludes the locating of contacts. —There is no interviewing of the man or of his sex partners. These contacts are not placed under medical treatment, and thus the reservoir of infection remains and grows.

4. Punishment rewards the dishonest and puts a penalty on those honest individuals who report their infection. Because it is known that in some areas as many as 90% of personnel expose themselves to possible infection and that ordinarily only about 1 infection results from each 200 to 250 exposures, punitive measures penalize the unfortunates who acquire and report venereal disease. Thus the man who follows instructions and reports promptly is penalized, while the one who attempts self-treatment often escapes punishment.

Dr. Joseph E. Moore, Adjunct Professor of Public Health Administration at Johns Hopkins University, and consultant to the Armed Forces on venereal disease control measures, summed up the case against punishment in this way: "Venereal diseases are diseases, not crimes. Hope of control lies in early recognition and treatment and searching for the sources of infection according to sound principles of preventive medicine. It has been the universal experience that penalties tend to drive these diseases under cover, and thus, render more difficult the operation of control measures."

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Problem? Solutions?

Because the Preventive Medicine Section of the Navy Medical News Letter is intended to disseminate helpful information to those in the field, your questions on any subject of preventive medicine or your experiences in solving problems are invited. Brief articles of from 200 to 500 words are desirable. It is no longer possible to use photographs with these items but pen-and-ink graphs and diagrams may be included.

Items should be addressed to Preventive Medicine Editor, Code 72-M, Bureau of Medicine and Surgery, Department of the Navy, Washington 24, D. C.

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